

EIGHTH ORDINARY GENERAL MEETING.

THE Eighth Ordinary General Meeting of the Session was held at the Whitehall Rooms, Hôtel Métropole, on Tuesday, June 9, 1896, when Sandford Fleming, Esq., C.M.G., read a Paper on "Canada and Ocean Highways."

The Right Hon. the Marquis of Lorne, K.T., G.C.M.G., M.P., a Vice-President of the Institute, presided.

The Minutes of the last Ordinary General Meeting were read and confirmed, and it was announced that since that Meeting 45 Fellows had been elected, viz., 9 Resident and 36 Non-Resident.

Resident Fellows :—

Ralph S. Ashton, B.A., John Astrop, William H. Durrant, Ernest Grant-Govan, Herbert L. Hudson, F. Wootton Isaacson, M.P., Sir Weetman D. Pearson, Bart., M.P., Charles W. Stevens, Colonel Charles M. Watson, R.E., C.M.G.

Non-Resident Fellows :—

Capt. George B. Appleton (Victoria), Andrew Bennie (Cape Colony), Hon. Sir Mackenzie Bowell, K.C.M.G. (Canada), Thomas J. Britten (Transvaal), Arthur J. Broad (Mauritius), J. B. Brown (Transvaal), Bernard Cave-Brown-Cave (Sierra Leone), Dr. J. G. Croghan (Cape Colony), William Crosby (Transvaal), Dr. Henry W. Drew (Cape Colony), John C. Farquharson, J.P. (Jamaica), Hon. J. J. Felton, M.L.C. (Falkland Islands), Rev. Walter K. Firminger, M.A. (Zanzibar), Very Rev. Dean A. R. Fitchett, M.A. (New Zealand), Myer J. Foote (Transvaal), George Greig (Ceylon), George C. Halliday (New South Wales), Francis Hart (Western Australia), Edward W. Hayward (South Australia), Hon. John Henry, M.L.A. (Tasmania), Thomas H. Holdship (New South Wales), Harry C. Lovemore (Transvaal), Ernest McDonald (British Honduras), George MacDonald (Gold Coast Colony), Rev. J. Middleton Macdonald (India), George J. Penny (Straits Settlements), W. A. Phillips (Transvaal), John T. Ralston (New South Wales), L. C. Reynolds (Transvaal), Edgar P. Rathbone (Transvaal), James C. Sharp (Transvaal), Capt. C. J. Sims (Transvaal), Thomas Stevensen (Cape Colony), H. G. Vander Hoven (Transvaal), Dr. S. H. R. Van Ryck de Groot (Gold Coast Colony), Frank Wright (Gold Coast Colony).

It was also announced that donations to the Library of Books, Maps, &c., had been received from the various Governments of the Colonies and India, Societies and public bodies both in the United Kingdom and the Colonies, and from Fellows of the Institute and others.

The CHAIRMAN: During this Session a series of papers, by writers of recognised authority, have been read and discussed,

It is usual to include, if possible, in our annual programme, a paper on Canada, as forming one of the most important parts of the Empire, and we are fortunate in having induced Mr. Sandford Fleming, who has just arrived in this country, and whose name is a household word in the Dominion, to address us this evening. The Royal Colonial Institute is being favoured with another prosperous year, and continues to command the confidence of our Colonial friends and supporters. We have added to the roll no less than 176 new Fellows, as against 119 during the corresponding period of 1895. Several important questions have recently come under the consideration of the Council. In view of the general desire for a closer relationship between all parts of the Empire, they have felt it their duty to urge on the Chancellor of the Exchequer that serious objections exist to the present practice of levying income tax here on income that has been earned and already taxed as such in the Colonies and Dependencies. They, therefore, asked that the law might be so amended as to exempt income from the payment of income tax in the United Kingdom in all cases where it has already been charged with income tax in that part of the Empire, wherever it may be, where it was earned. The Lords of the Treasury state, in reply, that they are unable, for various reasons, to accept the suggestion contained in the memorial; but the Council are still hopeful that, on further reflection, the desired exemption may be conceded. We rejoice to be able to welcome this evening Sir Mackenzie Bowell, who took the place of the late lamented Sir John Thompson, and who has served Canada as Prime Minister. We are glad to find that although he has for a time laid aside official harness, he is hard at work at the present time at the conferences now being held in London, serving Canada as he has throughout his whole life. We hope he may long be spared to continue his able and useful services. We have also the pleasure of welcoming for the first time—not for the first time in his personal capacity, but for the first time in his official capacity—Sir Donald Smith, High Commissioner for Canada, and we are well assured there could be no worthier representative of Canada in Great Britain. Mr. Sandford Fleming is also by no means a stranger to these rooms and these audiences. You are aware he may be called the pioneer of trunk railway construction in Canada, for he was chief constructor of the Inter-colonial Railway. It is not only as a great railway constructor that he is distinguished, but as a man of science. It is to him we owe the meridional division of time. As you are aware, the great continent of America is mapped out by meridians, and within them the

trains run upon one time, just as in Europe trains are arranged on the times of the great capitals. It is not always possible even under this arrangement to catch a train, for the experience of many of us is that there is not only meridional but ladies' time, and Mr. Fleming, great scientific man as he is, has never been able to calculate and formulate that time. I have no doubt that to-night he will tell us something not only about trans-continental travel, but also about ocean travel—not only what trains to catch, but about the means of crossing the two oceans.

Mr. Sandford Fleming, C.M.G., then read his paper on—

CANADA AND OCEAN HIGHWAYS.

I have been requested to address the members of this Institute on Canada. The subject selected for me is exceedingly comprehensive, and I owe it to myself to say that it will not be possible, in the short space of time placed at my disposal, to do more than refer briefly to some one of the many considerations having relationship to the Dominion; and that, imperfectly as I may be fitted to address you, I have undertaken the duty not without hesitation, but owing to the desire I strongly entertain of serving my country as well as I am able.

The cause which the Royal Colonial Institute is designed to promote is indicated in the words that appear in the motto it adopted. Whatever title may be assigned to my paper, these words, "United Empire," are sufficiently suggestive to me. In my opinion I can submit to this audience no remarks more appropriate than those which are in full accord with the two words quoted. Canada is no insignificant portion of the great British Empire, and in my country, as in every quarter of the globe where the sway of our good Queen extends, be the portion of territory of wide or of limited extent, we find a feeling prevailing that it is of the first importance to improve and increase the means of intercourse between the individual parts, so as to strengthen the bonds of union between the Mother Country and the whole Empire.

I propose, therefore, respectfully to submit to your consideration what may be called the development of the means of transit across the ocean ferry lying between Great Britain and Canada. In directing your attention to this subject I shall refer to the past, the present, and the future, alluding briefly to proposals which have been made so that the ocean may be crossed rapidly and in safety. I shall likewise submit some suggestions in reference to means of

traversing the intervening distances between the Mother Country, Canada, Australasia, and India in the least possible space of time, and with as absolute freedom from danger as is attainable.

You will, I trust, believe in the honesty of purpose with which I shall present my own views, not from an undue sense of their value, but from the conviction that the most humble amongst us may be capable of adding to the common stock of experience, even though it be slight. Expressions of error or of mistaken views may even be of service if they lead to examination and criticism; a recommendation which is impracticable may suggest what is practicable and attainable; it may awaken attention to a public want and lead abler minds than its advocate to grapple successfully with the difficulties which he has failed fully to meet. I must respectfully ask that this view of the duty I have undertaken may be kindly accepted as an explanation for my appearance before you at this meeting of the Institute.

Allow me then in the first place to direct your attention to the map of the world on the wall. On this map my friend Dr. Parkin has depicted in a conspicuous manner the British possessions in both hemispheres. It will be apparent to you that the Dominion, as a member of the Empire, occupies a singularly central geographical position. To the west we see the British possessions in Asia and in Australasia; to the east those in Europe and Africa. Two great oceans, the Pacific on the one side, the Atlantic on the other, provide the means of direct communication by steamship between Canada and every point where the British flag flies on these oceans. Coal, an indispensable adjunct to steam navigation, is not wanting; nature has furnished a bountiful supply for the marine of the future on both oceans; it is found in inexhaustible deposits on the eastern and western sea-boards of Canada.

From these facts, and a knowledge of the many and varied resources of the Dominion, from an intimate acquaintance with its people, I feel warranted in expressing the belief that Canada is destined to play an important part in the future of the British Empire.

In June 1897 four centuries will have elapsed since the first recorded European voyage was made to that portion of the American Continent now known as the Dominion of Canada. Although the commander of the vessel was born in Venice, the crew was English, and the voyage was undertaken with the private resources of the merchants of an English seaport. The vessel was a small craft, "The Matthew," of Bristol, with a crew of eighteen men.

The commander, John Cabot, with his family, had established himself in England. On the petition of this John Cabot and his three sons—Louis, Sebastian, and Sancia—a patent was granted by Henry VII., dated March 5, 1496, empowering them and those associated with them, at their own expense, to discover any new lands not hitherto claimed by any Christian monarch, and to take them in possession for England. Cabot sailed from Bristol the following spring. On his voyage he discovered the American Continent, and in three months he returned with a report of his discovery. As an outcome of this voyage a flotilla of four ships with 800 men was fitted out the following year. The second patent was granted in favour of John Cabot alone. There is nothing to guide us as to the position he assumed on this voyage. The credit of the voyage was afterwards claimed by his son Sebastian, who returned in command. It has been supposed that John Cabot may have died at sea, as nothing is known of his services on this second voyage. What is of importance in the annals of Canada is the first voyage of John Cabot in 1497. Some writers on this subject have attributed to him the discovery of Newfoundland on his first voyage; modern inquiry rejects this view, and there is a consensus of all who have diligently examined this subject that the landfall of John Cabot of June 24, 1497, was on the most eastern point of Cape Breton, now part of the province of Nova Scotia, in the Dominion of Canada. Of the second voyage of the Cabots, in 1498, with which the name of Sebastian, the captain, is generally identified, the accepted opinion is that he struck land at Labrador, and descended the coast southerly as far as Cape Hatteras.

I must ask to be permitted to refer briefly to the historical records, known, doubtless, to many who hear me. In placing John Cabot first as the discoverer of the mainland of America, I have not forgotten the claim advanced in favour of Columbus. Columbus left Spain in 1492 to reach the island of San Salvador, and it was not until his third voyage, in August 1498, that he sighted that part of South America not far removed from the territory now in dispute with Venezuela. Thus Columbus saw for the first time the continent of South America more than a year after Cabot made his memorable discovery, and it does not appear that he (Columbus) sighted North America proper on any one of his voyages. The same may be said of Amerigo Vesputius, after whom the Western Continent has been named. If his own account is trustworthy, Vesputius reached America eighteen days before Columbus. According to Humboldt and others, the opinion is that

Vespucius had no share in the first discovery of America, and that by error the new continent received the name it bears. Vespucius' account of his voyage and discoveries is not remarkable for the modesty with which it is written. It was published at St. Dié, in Lorraine; by a clerical error it was stated that Vespucius preceded Columbus in reaching the mainland, and as the proposition that the continent should be named after the first discoverer was generally accepted, the new continent received the name of "America." No one at the time recognised the error, and the name of America has continued in use. That the name of Columbus or Cabot was not given to the newly discovered continent presents one of the many facts to show how chance governs much of our history.

The desire to recognise Columbus as the first discoverer of America has led some to deny John Cabot's first voyage in 1497. They have gone so far as to refuse to believe even in his existence, and claim that the first voyage made by anyone bearing the name of Cabot was the second voyage of his son, Sebastian Cabot, in 1498, and that his landfall was Labrador. No conscientious writer can now maintain that view; the whole subject has been minutely examined by a learned member of the Royal Society of Canada, Dr. S. E. Dawson, and I append his closing remark:

Upon that easternmost point of this Nova Scotian land of our common country John Cabot planted the banner of St. George on June 24, 1497, more than one year before Columbus set foot upon the main continent of America; and now, after almost 400 years, despite all the chances and changes of this Western world, that banner is floating there, a witness to our existing union with our distant mother land across the ocean. May the *cavo descubierta por Ingleses* ever be thus adorned; and meantime, when in 1897 St. John the Baptist's day arrives, what shall Canadians do to commemorate the fourth centenary of that auspicious day when the red cross was planted on the mainland across the western sea, and when on a point of land in our own Dominion the English tongue was heard, of all the languages of Europe the first, upon this great continent—from the desolate shores of the Arctic Ocean on the north to the silent wastes of the Antarctic on the south?

We claim, consequently, that Cabot's voyage of 1497 takes precedence of every recorded voyage between the two continents in the northern hemisphere, and that the frail craft "The Matthew," with a crew of eighteen Bristol sailors, may be viewed as the forerunner, the primitive embryo, of the magnificent fleets of ships that now traverse the ocean with so much regularity between the Old and New Worlds.

Among the navigators who succeeded Cabot we are told that Cortes Réal discovered the Gulf of St. Lawrence. But probably that honour belongs to Denys, of Honfleur, who in 1606 made a map of those waters. We have also a record of discoveries by Verrazzanno and others. Jacques Cartier, so well remembered in Canada, made his first trip in 1537, his last in 1548. This French navigator ascended the St. Lawrence and established the claim to the discovery of Canada, as it was long afterwards known, and from which the Dominion took its name.

In 1583 Sir Humphrey Gilbert crossed the ocean to Newfoundland, of which he took formal possession in the name of Queen Elizabeth. One of his three small vessels foundered near Cape Breton, not many leagues from the landfall of Cabot, when the commander and all hands perished.

Champlain, the founder of the city of Quebec, made eleven voyages between 1603 and 1633. This date may be described as the approximate period when the voyage across the Atlantic had become an ordinary matter.

The first Colony of Englishmen landed in New England November 1620. From that date to the end of the seventeenth century the trade of the Colonies steadily and rapidly increased, and many ships were engaged in the transatlantic service. The English ships at the beginning of the eighteenth century, according to a statistical return, numbered 1,358; compared with modern vessels they were of small size, the largest did not exceed 157 tons.

England and Scotland united to form Great Britain in 1707, and the union gave an immense impulse to commerce. As time advanced, the size and accommodation of the ships were increased. The eighteenth century was remarkable for British maritime expeditions, and the development of the Colonies and shipping. The ocean was traversed by fleets of sailing ships to the second quarter of the nineteenth century, when a new power was brought into use, which completely revolutionised the means of crossing the Atlantic and navigating every ocean.

Early in the century some progress had been made in applying steam to navigation, but it was chiefly confined to rivers, estuaries, and inland waters. It was through the enterprise of Canadian merchants that the ocean was first crossed by steam power. The first ocean-going steam vessel was constructed at the city of Quebec. It was built by a joint-stock company, the designer being Mr. James Goudie, a native of the city, of Scottish descent, who died only four years ago. The vessel was launched in the spring of 1831, with

more than ordinary ceremony, in the presence of the Governor-General (Lord Aylmer) and a large concourse of citizens, the band of the 82nd regiment being also present. The vessel was named the "Royal William," after William IV., then on the throne. Her dimensions were : 146 feet keel, 176 feet over all ; beam 27 feet 4 inches ; width over paddle-boxes 43 feet 10 inches, between paddle-boxes 28 feet ; depth of hold 17 feet 9 inches ; draught 14 feet. She had three masts, schooner rigged ; measurement 1,370 tons, and accommodation for sixty passengers. She was towed to Montreal to receive her machinery, and made several trial voyages to Halifax and Boston. She left Quebec for London on August 5, 1833, called at Pictou, Nova Scotia, to receive coal, resumed her voyage on August 18, and arrived with her passengers and cargo safely at Gravesend on the Thames, in twenty-five days. On the banks of Newfoundland she encountered terrible gales, through which one of her engines was disabled. This steamship afterwards passed into the service of the Spanish Government, and was renamed the "Isabella Secunda."

A claim has been made on the part of the United States that the "Savannah," built at New York, and launched August 22, 1818, was the first ocean steamship. Investigation has established that the vessel in question was a sailing ship, to which was added shifting paddle-wheels capable of being driven by an engine placed on deck. The paddle-wheels were so contrived that they could be folded up on deck and lowered into the water in a few minutes in calm weather, and again folded on deck when the wind rose, or when the sea was rough. The vessel had no capacity for carrying coal ; indeed, it is doubtful whether coal was used, one authority stating that the fuel burnt was wood. The recent publication, by the Smithsonian Institute of Washington, of the log of this vessel on her trip to Europe, has completely swept away the claim that this ship was propelled by steam across the Atlantic. The record states that on the whole voyage, which extended over 29 days 11 hours, steam was used in the aggregate 3 days 8 hours only. That is to say, she was for 627 hours propelled by wind alone, on a voyage of 707 hours, the makeshift paddle-wheels being all this time folded up on deck ! The "Savannah" did not carry a single passenger. On her return voyage to America she was propelled wholly by wind. On her arrival the steam-engine and the primitive paddles were entirely removed, and the vessel resumed her character as a sailing ship.

There can be no question that the "Royal William," of Quebec, was the first ocean steamship to carry passengers ; indeed, the first

ocean steamship constructed. The fact is so well established, that the Dominion Parliament ordered a memorial plate, recording the event, to be placed in the corridor leading to the library of the Parliament Buildings at Ottawa. It was unveiled by His Excellency the Earl of Aberdeen, in the presence of the delegates present at the Colonial Conference held at Ottawa on June 28, 1894. The inscription testifies that the first vessel to cross the Atlantic by steam power was wholly constructed in Canada, and navigated to England in 1838, thus placing on indisputable record that the "Royal William" was the pioneer of those mighty steamers which furnish the naval strength of every nation, and, as messengers of peace and commerce, traverse every ocean.

This vessel may be regarded as the direct forerunner of the celebrated Cunard flotilla. Among the shareholders were Mr. (afterwards Sir Samuel) Cunard, of Halifax, Nova Scotia, and his two brothers. Sir Samuel, a Canadian merchant, born in Halifax, was a man of much originality of character. He rapidly seized the situation; it became plain to him that the era of sailing vessels was passing away, to be succeeded by steamships. Acting upon this theory, after much labour and negotiation, he, associated with Mr. George Burns, of Glasgow, and Mr. David McIver, of Liverpool, succeeded in obtaining from the British Government a contract for carrying the mails across the Atlantic. In 1838 four steamships—the "Britannia," the "Acadia," the "Caledonia," and "Columbia"—certainly four significant names—were placed under construction. On their completion they formed the first of the splendid vessels that constitute the Cunard fleet.

Independently of the proceedings of Sir Samuel Cunard and his associates, the British and American Steam Navigation Company was formed in the Mother Country in 1836 by British merchants. The construction of the "Great Western" was followed by the "Sirius" being chartered by this company. These two were the first steamships to cross the Atlantic after the "Royal William." The "Sirius" left London on April 4, 1838; the "Great Western" started from Bristol four days later. Both arrived at New York on St. George's Day, April 28.

While the honour of building the first steamship in Europe expressly intended for transatlantic voyages, and the first actually to cross the ocean from East to West, unquestionably belongs to Bristol, equally the honour of building the first steamer to cross from West to East belongs to Quebec. The "Royal William" made the first passage five years earlier than the "Great Western." She never

returned to Canada. Having been sold to the Spanish Government she took part in the Carlist war, then in progress, and was the first steamship from which was fired a hostile shot. Her history is fully recorded in Canadian Parliamentary documents. While we have thus placed on record the claims of the oldest city of the Dominion, at the same time we yield all honour to Bristol. To that historic city a double debt is due. Near the end of the fifteenth century Bristol fitted out the little craft which bore the discoverers of the Western Continent across the main; in the seventeenth century Bristol took an active part in the early attempts to colonise the new world; in the nineteenth century Bristol constructed the first steamship to cross the ocean from the shores of England.

The success of the Cunard Line needs no comment. For many years this line carried the mails between Liverpool, Halifax, and Boston; subsequently the steamers extended their voyages to New York, to which port they still run. The development of the Cunard Line has been a continued success from its first inception to the present day. Of what other company engaged in the movement of human beings by sea or land can it be said that in fifty-six years it has, under Divine Providence, never lost the life of a passenger? A comparison between the "Britannia," the first Cunard ship launched in 1840, with the "Lucania," launched in 1893 (the last addition to the fleet), indicates a marvellous advance—the result of gradual improvement in construction year by year.

The "Britannia" was a paddle-wheel steamship constructed of wood. The "Lucania" is a double-screw steamship constructed of steel.

Length of the "Britannia"	207 feet	Length of the "Lucania"	620 feet
Tonnage	1,139	Tonnage	12,950
Horse-power	740	Horse-power	30,000
Speed per hour (knots)	8½	Speed per hour (knots)	21½

The "Britannia" was designed to accommodate ninety passengers; the "Lucania" to accommodate 600 first-class, 400 second-class, and 700 to 1,000 third-class passengers.

Before the establishment of the Cunard Line the transatlantic passenger and mail traffic had been carried by sailing packets, the fastest sailing ships in the world; but they were driven out of the field by the new means of transport. Practically the Cunard Company had no competitor for the first nine years. The Collins Line, heavily subsidised by the United States Government, commenced operations in 1849, the Inman Line in 1851. The former

met with serious disasters, and collapsed in 1858. The latter has been successful, and under another name is still actively employed. The White Star Line did not enter into the transatlantic steamship trade until 1870. In that year, their first steamship, the "Oceanic," was launched. She was speedily followed by other ships, in all of which many improvements were introduced conducive to the comfort of the passengers. The "Britannic" and "Germanic" were added in 1874-5; both ships soon became great favourites with Atlantic travellers. The "Teutonic" was launched in 1889, and the "Majestic" in 1890, both superb vessels, and it may be affirmed that the enterprise of the White Star Company, and the skill and foresight exercised in every department of their service, have done much to bring the comfort, speed, and safety of ocean travelling up to the high standard it has now reached.

I have merely referred to a few of the leading lines of ocean steamers plying regularly across the Atlantic. By the statistical returns there are no less than thirty-three regular lines in the transatlantic trade, comprising 105 steamships, ranging from 2,000 to 16,000 gross tonnage, and varying in speed from ten to twenty-two knots an hour.

Thirteen years were allowed to elapse after the sailing of the first Cunard ship before efforts were made to create an independent line for the St. Lawrence. In 1851 the Canadian Government called for tenders for the establishment of a line of screw steamers, the feasibility of the propeller being then fully established. The contract was given to a Glasgow firm, but as it failed to give satisfaction, the Canadian Executive again threw the contract open to competition. The firm of Mr. (afterwards Sir Hugh) Allan had two vessels, the "Canadian" and the "Indian," which had been engaged in the service of the British Government in the Crimean war. The contract was awarded to him. Two additional vessels, the "North American" and the "Anglo-Saxon," were immediately placed under construction. With these four vessels the line went into operation in 1856, to be supplemented as time advanced by the large fleet of ships of which it is to-day composed.

Since that date other Canadian lines have been formed which do not call for special mention. There are in all twelve different lines of steamers plying from the St. Lawrence regularly across the Atlantic, supplemented by steamers, known as "tramps," running at irregular periods. Thus the first essay of the "Royal William" has step by step led to the extensive development of ocean steamship navigation. We have now reached a

period when further advancement, so far as Canada is concerned, has to be considered, for it must be recognised that the ocean marine connecting the Dominion and the Mother Country is not up to date, and that it has made little or no advance since the SS. "Parisian" of the Allan line was launched fifteen years ago.

The addresses which from time to time have been delivered before the members of this Institute by distinguished writers on Colonial expansion and Imperial unity, all point to the claim which the development of ocean highways makes on the attention of the public on both sides of the ocean. In view of the interests affecting the whole Empire which have been dwelt upon in these addresses, the importance of improving the means of communication between the outlying parts of the British possessions and the seat of Empire in these islands is self-evident. The fullest inter-Colonial and Imperial relationship being recognised as a necessity, we may profitably consider the various attainable means which present themselves to our examination. From every direction we may be impressed with the great problem—the Unity of the Empire; but it is not possible to continue to entertain this feeling merely as a sentiment; we must leave the domain of theory for that of practice, and proceed to ascertain what is within our grasp. In considering the ocean highways, that across the Atlantic naturally comes to our attention first, and independently of the possibility of extending the connection to Australasia or to India, the transatlantic service rises in importance as we recognise the necessity of rendering the passage as satisfactory as possible, so that people of industrious habits in the congested districts of the United Kingdom may find relief by overflowing to another part of Her Majesty's wide domain, and with ease reach the wheat fields, mines, forests, and fisheries of the Dominion. It is incumbent upon us likewise to provide the means of conveying in the most perfect condition the surplus products of the pasture lands, the orchards, and gardens of Canada to the consumers who remain in the old land.

Great advance has been made during late years in the improvement of steamships, in their speed and safety, in the conveyance of passengers with comfort, and in the appliances for preserving perishable products. The finest steamships, with all modern improvements, run regularly between England and Australasia by way of the Suez Canal. Similar vessels are likewise to be found between Liverpool and New York. With regard to the Canadian route we are forced to admit that at present the ships engaged on it cannot

be rated in the highest class, and that the accommodation they furnish demands improvement.

It is a matter of pride for us in Canada that the physical obstacles which, until the last half century, impeded the navigation of the River St. Lawrence have been removed by art. At an immense cost a navigable channel has thus been obtained from the tide water of the Atlantic to the interior of the Continent. The distance to the terminus of our inland navigation on Lake Superior, from the Straits of Belle Isle, is over 2,000 miles. In this distance the height of 600 feet is overcome by 72 miles of canal and improved water channels, Lake Superior being at that elevation above the tide water of the Atlantic coast. These great canal works have been in progress for more than sixty years; they are now on the eve of completion, and will admit steamships drawing 28 feet as far as Montreal, and vessels having a draught of 14 feet to Lake Superior. The last lock completed, that between Lakes Huron and Superior, is perhaps the largest in the world, its dimensions being—length 900 feet, width 60 feet, depth 20 feet. The value of this important inland navigation for conveying cheaply the products of the farm, the forest, and the mine, is very great.

There are controlling circumstances which affect the northern portion of the American continent similar to those felt in Europe. There is, indeed, some resemblance between Canada and Russia. The climatic conditions of the two countries are in some particulars much the same, and their geographical characteristics are not widely dissimilar. In Canada we have an inland sea—the Gulf of St. Lawrence—like the Baltic, open in summer, but in winter more or less obstructed by ice so as to impede navigation. The shores of the Gulf of St. Lawrence are everywhere British, while Sweden, Germany, and Denmark share with Russia the claim to the shores of the Baltic. Hudson Bay in one respect resembles the White Sea; its shores are wholly Canadian, as the shores of the White Sea are wholly Russian. During a short period in summer both seas are open to navigation; although, in this respect, Hudson Bay possesses advantages, the White Sea being but a southern extension of the Arctic Ocean, while Hudson Bay is an arm of the Atlantic. Both Canada and Russia experience extremes of climate. In some parts of Canada, as in Russia, summer heat is excessive, and a low temperature prevails in winter. The variation in the climatic conditions of localities is very much more marked in Canada than in Russia, owing to the moderating effect of the two oceans to the east and west of the Dominion, and the ameliorating influences

exercised by the immense lakes of fresh water in many localities in the interior of Canada—influences which are absent in Russia—and thus we have in Canada greater varieties of climate, and larger areas of country suitable for settlement and cultivation.

There is one especial feature in which Canada differs from Russia, which confers upon the Dominion great benefit, as will readily be acknowledged. Russia has no free outlet to the waters of the Atlantic to give access to the high seas. The navigation of the Baltic is closed in winter, and the ice-bound shores of the Arctic Ocean are seldom open. If the return of winter closes the Canadian ports on the St. Lawrence and its affluents, fortunately the open ports of the maritime provinces offer free access to the Atlantic at all times of the year. The best known of the Atlantic harbours connected by railway with the interior are St. Andrews, St. John, Halifax, Louisburg, and Sydney. The last-named are the nearest to Europe. There are few better harbours than Sydney; it is easy of access and egress, and capable of containing a large number of ships in safety, and, moreover, it is in the heart of the Cape Breton coal fields. Sydney has, however, its drawbacks; the adjacent sea is in the winter season at times laden with drift ice, which frequently remains until late in May; large masses of ice are sometimes driven into the harbour at this season.

Louisburg, once the principal seat of the French power in North America, is advantageously situated, but the harbour is small, the area of deep water suitable for large vessels limited, while the entrance is contracted, and is held by mariners to be open to other objections.

Halifax Harbour is described in nautical works as "one of the best in the world, affording space and depth of water sufficient for any number of the largest ships with safety. It is easier of access and egress than any other large harbour on the coast." There can be no doubt that with a sufficient number of automatic buoys, lights, and signals, Halifax may be approached in any weather at any time, day or night, with absolute safety. Unlike New York, Halifax has no intricate entrance channel such as that at "Sandy Hook," impassable by Atlantic liners at some conditions of the tide, especially in bad weather. This difficulty may not be generally known, as in reporting the passages of fast steamers on the New York route, the time of transit is usually given not from the pier at New York to the pier at Liverpool, but from a point outside of Sandy Hook to the most westerly light on the Irish coast. This is misleading, as the time of making the voyage is considerably increased

by difficulty in getting into or out of port. The writer on one occasion spent along with other passengers two nights on board an Atlantic "greyhound" in New York Harbour owing to the impossibility of getting to sea through the cause assigned.

To be classed as summer routes are those followed by steamships to Quebec and Montreal, whether they enter the Gulf and River St. Lawrence by the passage known as Cabot's Strait, to the south-west of Newfoundland, or by the Straits of Belle Isle, between Newfoundland and Labrador. Two other lines which have been projected may be placed in the same category. (A) A route across the island of Newfoundland itself, the ocean steamships terminating their voyage from the east at St. John's, connecting with a railway across the island, and, by means of a ferry, completing the connection with the railways of the Dominion. (B) The project of terminating the ocean voyage at the most suitable point in the Straits of Belle Isle—probably Chateau Bay, on the Labrador coast—and following by a proposed railway the northern shore of the Gulf and River St. Lawrence to Quebec, so as to connect with the Grand Trunk and Canadian Pacific railways. While I mention these as possible routes, I am not insensible to doubts and difficulties involved in both projects. The latter, whatever the advantages claimed for it, would be in request only for the conveyance of passengers and mails, and available for not more than six months in the year. Who can, however, take upon himself to impose a limit to the requirements that the future will exact? Other routes have been suggested involving fewer difficulties. A connection may be formed between the Atlantic steamers and the railway systems of Canada at Gaspé or Campbelltown, at Dalhousie or Shippigan, at Mirimichi or at Pictou; but whatever the merits claimed for each of these localities, they all must be classed as summer routes; and whatever the development in future of the summer routes between Canada and the United Kingdom, it seems to me not simply expedient but most essential that a harbour open all the year round should be selected on the Atlantic seaboard as a permanent port of transshipment, and that to this port lines of the best and swiftest steamers should be run regularly all the year round. There are many advantages to be derived by the selection of Halifax (N.S.) as the Dominion terminus of a line of steamers to arrive and depart at regular intervals throughout the year, summer and winter. Halifax is in direct connection with the coal fields of Nova Scotia, it is the station of the British North Atlantic squadron, the capital of Nova Scotia, and the headquarters of Her Majesty's forces in

British North America. The British and Canadian Governments have invited tenders for a line of first class steamers of the "Teutonic" type, on the condition that they run once a week from Halifax in winter and once a week from Quebec in summer. I respectfully submit the view that in my humble judgment inconvenience will result from the enforced change of destination every half year, and that it will be more advantageous in many respects, in place of establishing a weekly line from Halifax during half the year, to place on the Halifax route a fortnightly line to run continuously throughout the year, and, as now proposed, to place in operation a weekly line of fast steamers from Quebec during the summer. This arrangement would extend to Quebec the same accommodation for passengers and mails as is now contemplated, *i.e.* it would give a weekly line during the open navigation of the St. Lawrence, and it would remove the inconvenience of suspending all direct connection between Halifax and Great Britain during half the year. There would, in the aggregate, be an equal number of passages in each year to and from Halifax, but they would be extended over twelve in place of six months. This fortnightly line of first class steamers from the port of Halifax would satisfy all present requirements. It is my belief that if the line were well established, traffic would so increase that more frequent steamers would at an early date be demanded, and before many years a weekly line from the Atlantic terminus would be required in addition to the weekly line from Quebec during the open season. These are merely my individual views, which I submit with all deference.

One of the national objects held in prominence in locating the Intercolonial Railway by the shore of the Gulf of St. Lawrence, was the influence it might hereafter exercise in developing the connection with Newfoundland. The theory was advanced that the waters of the Gulf between the mainland and Newfoundland could be crossed by ferry steamers, and the island itself traversed by railway from east to west, with the terminus at the harbour of St. John's, and that from St. John's swift steamers would ply across the narrow part of the Atlantic to make the quickest passage. It was hopefully considered that the establishment of this route for the conveyance of passengers and mails might, in the not distant future, command sufficient traffic to sustain a daily line of steamers across the ocean. The theory of including Newfoundland in the scheme of intercommunication by the construction of a railway across that island—a continuation as it were of the Intercolonial

line from Quebec—also embraced the prospect of Newfoundland becoming part of the Dominion. At this date the projected line will probably be regarded as less visionary than it appeared to many thirty years ago. Some advance has certainly been made in the direction indicated, Newfoundland has herself awakened to the spirit of progress, and has entered upon a policy of railway construction. A few more years may accomplish results not hitherto regarded as feasible except by a few hopeful minds.

As everything relating to the Atlantic steamship service and the establishment of an Imperial highway from the mother land to Canada, and through the Dominion to Australasia and India, is of interest, I ask permission to read a few paragraphs from the first report (1865) made by the writer when appointed by the Imperial and Provincial Governments to conduct the exploration and surveys for the Intercolonial Railway. They represent the thoughts and aspirations of that day :—

Newfoundland, a large island off the mainland of North America, and Ireland off the European coast, resemble each other in being similar outlying portions of the Continents to which they respectively belong. Possibly they may have a more important similarity and relationship through the remarkable geographical position which they hold the one to the other, and to the great centres of population and commerce in Europe and America.

A glance at the chart of the Atlantic will show that, between Ireland and Newfoundland, the ocean can be spanned by the shortest line.

Ireland is separated from England and Scotland by the Irish Channel; Newfoundland is separated from New Brunswick and Nova Scotia by the Gulf of St. Lawrence. Already railways have reached the western coast of Ireland, and brought it within sixteen hours of the British capital. Were it possible to introduce the locomotive into Newfoundland, and establish steam communication between it and the cities of America, a route would be created from Continent to Continent, having the ocean passage reduced to a minimum.

This route would not be open for traffic throughout the whole year. During certain months the direct course of steamers would be so impeded by floating ice that it could not with certainty or safety be traversed. It therefore remains to be seen whether the route has sufficient advantages whilst open, to recommend its establishment and use during probably not more than seven months of the year. . . .

The track of steamers from the British coast to New York, and to all points north of New York, passes Ireland and Newfoundland either to the north or to the south. The most usual course, however, is to the south of both islands. Vessels bound westerly make for Cape Race, on the south-easterly coast of Newfoundland, whilst those bound easterly make Cape

Clear. Near Cape Race is the harbour of St. John's, and near Cape Clear is the Harbour Valentia; the one is the most easterly port of America, the other is the most westerly port of Europe. They are distant from each other about 1,640 miles. . . .

At the present time ocean steamers generally carry both freight and passengers, and in this respect they are like what are termed mixed trains on railways. These mixed trains are employed to serve localities where there is not sufficient passenger and freight traffic to require the running of separate trains.

On railways doing a large business the traffic is properly classified—fast trains are run to carry passengers and mails only, whilst slow trains are used to convey heavy freight. A similar classification of ocean traffic may be suggested. Freight will naturally go by the cheapest mode of conveyance, while passengers and mails will seek the speediest.

It is well known that the shape of a steamship, other things being equal, governs her speed. The shape, again, depends on the load she may be constructed to carry. If the ship is required only for mails and passengers, and such voyages as need but a small quantity of fuel, she may be constructed on a model both sharp and light, and thus be capable of running more rapidly than if built to carry heavy and bulky loads. A steamship for heavy loads may be compared to a dray horse, whilst one made specially for passengers and rapid transit may resemble a race horse; and, like the latter, the less weight carried the more speed will be made.

If these views are correct, it is clear that the speed of ocean steamships might be considerably increased when constructed for a special purpose. The distance between St. John's (Newfoundland) and Valentia is not much more than half the distance between Liverpool and New York, and hence about half the quantity of coal and supplies would be required for the passage between the former points.

It is quite obvious, therefore, that a steamship constructed specially to run between St. John's and Valentia, and for the purpose of carrying passengers and mails, with such light express matter as usually goes by passenger trains, would attain a higher rate of speed than existing ocean steamers.

A rate of sixteen and a half miles per hour is thought to be quite possible; the distance between Valentia and St. John's is 1,640 miles. At the assumed rate the ocean passage might be accomplished in one hundred hours. . . .

Having shown that by shortening the ocean passage across the Atlantic to a *minimum*, the time of transit between the great centres of business in Europe and America can be very greatly reduced; so much so, indeed, that a reasonable hope may be entertained that the entire mail matter passing between the two Continents may eventually be attracted to the new route, it may be well now to inquire what portion of passengers may be expected to travel over it. . . .

It is obvious, then, that there is already abundance of passenger traffic

if the purely passenger route under discussion possesses sufficient attractions. To settle this point the advantages and disadvantages of the route must be fairly weighed.

The obstructions offered by floating ice during several months in the year are insuperable while they last. During this period Halifax, or some equally good port open in winter, will be available.

The frequent transshipments from railway to steamship, and *vice versa*, may be considered by some an objection to the route. For conveyance of freight they certainly would be objectionable; but most passengers would probably consider the transshipments agreeable changes, as they would relieve the tedium of the journey.

If, as it has been shown, this route would reduce the time between London and New York some three or four days, and bring Toronto one-third nearer Liverpool (in time) than New York is now; if it would give the merchant in Chicago his English letters four or five days earlier than he has ever yet received them; if it be possible by this proposed route to lift the mails in London and lay them down in New Orleans in less time than they have ever reached New York, then it surely possesses advantages which must eventually establish it, not simply as an Intercolonial, but rather as an Intercontinental, line of communication.

These are purely commercial considerations, and, however important they may be as such, the statesman will readily perceive in the project advantages of another kind. It may be of some consequence to extend to Newfoundland, as well as to the other provinces of British America, the benefits of rapid intercommunication. It will probably accord with Imperial policy to foster the shipping of the Gulf, and to encourage the building up of such a fleet of swift steamers as a daily line across the ocean would require. It must surely be important to the Empire to secure in perpetuity the control of the great highway between the two Continents. It must be equally her policy to develop the resources and promote the prosperity of these Colonies, and to bind more closely, by ties of mutual benefit, the friendly relationship which happily exists between the peoples on both sides of the Atlantic.

I will venture the remark that to-day the opinions expressed in those paragraphs will meet with less incredulity than in many quarters they were regarded thirty-one years back. It will be noticed that the writer was bold enough to express the opinion that a rate of sixteen and a half miles per hour for steamships specially constructed for speed might be assumed to be within the range of practicability. This view was at the time considered exceedingly sanguine and visionary. Now, the requirements of the present day demand a speed exceeding twenty miles an hour. The Government has advertised for tenders for a weekly steamship service between Canada and Great Britain for ten years to come, the tenders for

which are to be received to-morrow, June 10. Let me read Clauses 10 and 11 of the conditions :—

10. The vessels employed to be built under Admiralty supervision and in compliance with the requirements of the Imperial authorities respecting armed cruisers, and shall be of not less tonnage than 8,500 gross register tons, and when on service to maintain on the round trip from port to port across the Atlantic an average speed of twenty knots an hour, and to be constructed of the best materials, and furnished and supplied with sufficient fuel, stores, and provisions, tackle and all things necessary to enable them to perform the voyage contracted for, and to secure the safety of the mails and passengers, and to be in all respects first-class mail and passenger steamers, and equal in equipment to the "Teutonic," of the White Star Line, and to be manned with legally qualified competent officers and engineers, and a sufficient crew of able seamen and other men, and competent surgeons.

11. The vessels shall each have accommodation for not less than 275 first class, 200 second class, and 1,000 steerage passengers, and seating accommodation in the dining saloon for at least 275 passengers. The accommodation, board, and attendance shall be equal to that given to passengers on the best vessels plying between New York and Great Britain.

I have referred to the division of ocean traffic into two classes. The first class would only include passengers, mails, and light express goods. Steamships would be specially constructed for speed, safety, and comfort. The second class would comprise heavy merchandise, for the transport of which great speed is not deemed essential. Within the last few weeks I have received from a merchant in Sydney, New South Wales, a letter which supports the principle of classification suggested, a principle already in part put in practice in some of the newest and finest steamships constructed for the passenger and mail service between Liverpool and New York. Allow me to submit the following extract from this letter :—

It is a fact acknowledged by steamboat owners throughout the world that the day is passed when a passenger and freighting service can be combined with the same ship (except with respect to what may be termed express freight). What is designated rough cargo merchandise will command tonnage without a subsidy under present conditions in every part of the world. From a national standpoint the Governments of the Empire, Home and Colonial, are warranted in aiding lines of steamships by annual subsidies, in order to establish national highways connecting the Colonies with each other, and each with the Imperial centre.

If my Australian correspondent be correct, and I can only say he is a clear-headed man of business, perfectly familiar with trade and shipping, we may look forward to another important change if not

a revolution in the economy of ocean steamships, and especially in the further development of the transatlantic ferry. Great progress has certainly been made since the Canadian "Royal William" led the way across the ocean in 1838. There has been a steady improvement in the construction of steam vessels. In 1848 iron began to be substituted for wood. Soon afterwards the screw displaced the paddle-wheel. Compound engines were introduced in 1856 and came into general use in 1870. Nine years later steel ships came into vogue, and in 1888 twin screws were first adopted in Atlantic liners. Steamships have now reached a degree of perfection little dreamed of half a century ago, and they make the passage with marvellous speed and comfort. But the ebb and flow of travellers between the two continents has now become so striking, that there is an ever increasing demand for shortening the time of transit from shore to shore. We are, therefore, called upon to consider the expediency of meeting the demand by every means in our power, by making provision for the rapid conveyance of passengers and mails precisely as has long been practised on railways, leaving ordinary merchandise to be carried by less speedy means of transit. It is, likewise, our duty to consider how far it would be practicable to reduce the time of transit by adopting new routes across the ocean. We have only to look at the growth of traffic, and the volume it has already attained, to satisfy us that the transatlantic ferry has not yet reached a finality. According to estimates furnished me by the Dominion Statistician, there cannot be less than 750,000 persons travelling yearly between Europe and America, giving an average of fully 14,000 every week for the whole year, but we all know that by far the greater number of persons cross the ocean during the summer months, so that the summer average must be much higher than 14,000 weekly. This enormous passenger traffic is not diminishing, it is steadily increasing as improved facilities are provided for it. We are warranted, therefore, in the reasonable conclusion that for the highest class of steamships, established on the shortest practicable ocean route, abundance of traffic will be forthcoming.

In the face of what has been accomplished in the transatlantic service, who will venture to predict that no further progress will be made in the near future? Sixty years ago our fathers did not rest satisfied with the dictum of the learned Dr. Lardner, who declared that a voyage by steamship to the American continent from Europe was perfectly chimerical, and people might as well talk of making a voyage to the moon. That opinion of one of the most eminent

men of the day was expressed at a public lecture in Liverpool in 1885.¹ It was, however, disregarded, the enterprise of British merchants triumphed, and the wildest dreams of the most sanguine have since been more than realised. There are men then born who have lived to see the arrivals and departures of transatlantic steamships at New York reach as high as fifty, and at the Canadian port of Montreal no less than forty-four, in a single month.

I have referred to several alternative routes between the Mother Country and Canada, and pointed out the high importance which should be attached to those which may with perfect safety be used all the year round. Halifax is some 600 miles nearer Great Britain than New York, and with the ordinary steamer the ocean passage to and from Halifax may be made in fully a day less than the voyage to or from New York. Of the summer routes which are in use, or have been suggested, that by Blacksod Bay and Chateau Bay will be found the shortest. Blacksod Bay is described in Hoskyn's sailing directions as "one of the finest bays on the west coast of Ireland, is easy of access, and affords anchorage with space sufficient for a large number of vessels; it has always been a principal resort of Her Majesty's ships stationed on this coast, and one for which they never hesitated to run in bad weather." Chateau Bay is not so well known; it is on the Labrador side of the Straits of Belle Isle, and the population in the neighbourhood is confined to a few fishermen. The Admiralty publications describe this Bay as having "within it Henley, Antelope, and Pitt harbours, the two latter of which are quite secure and fit for large vessels." To establish a line of communication by this route would involve the construction of a railway from Chateau Bay to Quebec, a distance of about 900 miles, at an expenditure of probably £6,000,000. There are other considerations involved. Man can overcome certain physical obstacles by artificial means, but nature has imposed climatic difficulties beyond human power to remove. As a consequence of the latter this route could only be used for six months in the year. This limitation will adversely affect the consideration of this route, and I refer to it merely as a possible summer line of travel, by which the Atlantic could be crossed on its shortest span. From Blacksod Bay to Chateau Bay the distance is but 1,554 miles, or about half the distance from Liverpool to New York. It is true that this route would only be open in summer, but the same may be said of every

¹ See remarks by Commissary-General Lardner (son of the distinguished scientist) and by the Author of the Paper in course of the discussion, pp. 428 and 433, in explanation of above statement.

line by the Gulf and River St. Lawrence, a fact which adds immensely to the importance of the route available every month in the year by way of the open port of Halifax. This much can be said in favour of the summer route *viâ* Blacksod and Chateau Bays—if established it would during the season it would be open to traffic render it possible to cross the Atlantic from port to port in three days, and it would bring the capital of the Dominion within about five days' travel of the capital of the Empire.

I have dwelt on the ocean highway between the Mother Country and Canada, and the extreme desirability of rendering the passage as short, as safe, and as convenient as it is possible to make it, not in summer only, but all the year round. If we recognise the central position occupied by Canada between the United Kingdom and Australasia and India, it is obvious that a fast service on the Atlantic is but the prelude to an Imperial service from the British Isles, by way of Canada, to the most distant possessions in both hemispheres. Already a beginning has been made in the development of the ocean highway of the Pacific by placing two excellent steamships on the route between Vancouver and Sydney forming a monthly line, a small subsidy being granted by the Governments of Canada and New South Wales.

Another route on the Pacific has been opened up by the establishment of what is popularly known as the Empress Line between Canada and Asia. This line consists of three magnificent steel steamships, each of nearly 6,000 tons gross, with twin screws and two sets of triple-expansion engines developing 10,000 horse-power. The speed attained is about 18 knots. These steamships are assisted by the Imperial and Canadian Governments, and are owned by the Canadian Pacific Railway Company.

Few whose opinions are of value fail to recognise that trade and commerce play a most important part in the expansion of the Empire, and that no policy, however consistently carried out, tends more to its consolidation than wise efforts to stimulate an increase of commerce by supplying the freest and best means of communication.

If the mail service on the several great ocean highways be properly developed and permanently established on a sound and liberal basis, I can see nothing to prevent the time of transit between London and Australia being reduced to twenty-five days, and between London and Yokohama to eighteen or nineteen days. Already by the existing partially improved means of communication *via* Canada the mails have been delivered in London from Yoko-

hama in twenty days nine hours, that is to say in less than half the time required by the old route *via* the Suez Canal, the prescribed official time of transit having been forty-three days.

I have not specially referred to the proposed Pacific Cable. I feel it unnecessary to add that a submarine telegraph connecting Canada with Australasia is an indispensable adjunct, and that, quite apart from its value to the Empire as a means of instantaneous communication, it is essential to the commercial success of steamship service.

The coming year will be memorable in Canadian history in connection with three remarkable events, each appealing to public attention, associated, as they are, with the subject I have imperfectly brought to your notice.

1. On July 1, 1897, the thirtieth anniversary of the day on which the Dominion attained its political being will be celebrated. During these thirty years the people of Canada, with the fullest faith in the principle of rapid and easy communication, have established railways from the shores of Nova Scotia on the Atlantic to British Columbia on the Pacific. This work has been accomplished in spite of difficulties of magnitude at an enormous expenditure, but it was felt to be indispensable in the national interest. The effect of the creation of the Dominion has been to bring into intimate political relationship provinces hitherto disconnected and separated by physical obstacles as well as by hostile tariffs, and to constitute these different communities of different origins into one people with common sentiments and national aims. The material effect has been to change the face of the wild continental wilderness of the central plains so that it may become the home of millions of happy and prosperous British subjects in place of being the haunts of the savage and wild animals.

2. If our gracious Sovereign be spared to us next year, and we all trust her reign may be long continued, we will celebrate the sixtieth anniversary of the beginning of her sovereignty. Her Majesty's reign will then have extended over double the number of years of the political life of the Dominion of Canada, and she will have reigned a longer period than any other British monarch. The Victorian age has witnessed vast strides in the extension and unification of the Empire. It has been remarkable in every sense. In no other similar period in the history of the world has there been so much advance in material and moral progress. It has not been entirely free from war, but war has not been its prevailing feature.

It has to a large extent been an age of peace ; science, thought, invention, and industry have had full sway, and their products are seen everywhere on sea and land. The sphere of trade has been extended and enlarged, education has been general, and missionary effort has gone forth to the remotest corners of the globe.

In the Queen's happy reign we can record countless reforms and applications of science to ameliorate the condition of the human family—postal improvement, telegraphy, photography, cheap printing, telephones, railways, ocean steamships, submarine cables, lighting and locomotion by electricity, and the thousand uses to which science is applied in every day life. They all, or nearly all, have had their origin—certainly their development—during the period the Queen has sat on the throne.

8. On the day following the sixtieth anniversary of Her Majesty's reign, June 21, 1897, the Royal Society of Canada will open its annual session in Halifax, Nova Scotia. The members will make a journey to the landfall of Cabot to lay the foundation of a monument to commemorate the discovery of the continent and celebrate the first planting of the flag of the English King (June 24, 1497) on territory now forming part of the Dominion of Canada.

In Canada we do not think in a light spirit of these historical events. The commemoration will not be confined to one place or limited to one day. The city of Toronto is making great preparations to commemorate them in a manner worthy of their importance. The general and local governments will co-operate with the citizens in various ways. It has been determined to open a great historical exposition during the summer. The Parliament Buildings and the halls of the several universities in Queen's Park have been granted for the purpose, and, what will add to the interest of the occasion, the British Association has resolved to meet next year in that city.

With permission, I will read the views of the President of the Royal Geographical Society, Sir Clements R. Markham, conveyed to the Royal Society of Canada in a letter to the secretary dated April 26, 1896 :—

It is fitting that the memorable achievement of that intrepid seaman, John Cabot, should be remembered on the 400th anniversary of his discovery, and it seems to me to be specially fitting that a commemoration should take place in the land which he was the first to discover. There is great significance in the voyage of Cabot. It was not the first British enterprise of the kind, for during the previous seven years expeditions had been annually despatched from Bristol to discover land to the westward.

But it was the first that was led by a man possessed of all the scientific knowledge of his time, and the first that was successful. John Cabot must therefore be considered to have been the founder of British maritime enterprise. It is unfortunate that nothing has been preserved that can give us a clear idea of the man, of his character, and his attainments. We can form a judgment of Columbus from his writings. We know something of his heroisms and of his failings. He is a living man to us, and therefore he has attained world-wide celebrity, and appeals to our sympathy and our reverence. John Cabot is little more than a name. The few facts we know concerning him are immortal facts ever to be had in remembrance. He made the third voyage across the Atlantic and returned. He discovered the mainland of America. He raised the beacon which showed Englishmen the way to the New World. He was the first to hoist the cross of St. George on the western side of the Atlantic Ocean. His fate is unknown. Scarcely anything is known of his companions. But the names of three Englishmen are preserved who certainly fitted out vessels, and probably went with Cabot in 1498. The names of Lancelot Thirhill, Thomas Bradley, and John Carter therefore should also be had in remembrance.

Having, I fear, greatly trespassed on your patience, it remains for me to thank you for the attention you have been good enough to give my imperfect attempts to discuss a very important subject. The ferry across the Atlantic is in my judgment one of the leading questions of the day, especially when considered in its relations to the Empire. I must ask you to kindly pardon any failure on my part in bringing the subject succinctly before you. It would not have been difficult to have sustained my views by statistics, but they are obviously out of place on an occasion like this. My effort has been simply to submit to you in its broad character the several aspects of an important Imperial project.

I will only add that this Institute is a magnificent proof of the spirit which so generally prevails on the subject of Imperial Unity, and the fervent desire to make closer and render permanent the relationship between several great divisions of the Empire. If this feeling is called forth in a British subject, it is especially as a Canadian British subject that I view the question. Let me repeat that in the Dominion we desire to have the closest connection with our fellow subjects—the kinsmen of many of us, in these islands. It is our desire so effectually to span the ocean that it will no longer be held to separate us, but will rather cement the Dominion to the Mother Country by rendering it a matter of ease for your surplus enterprising youth to occupy with us our land of fruitful valleys, of fertile plains, and spreading forests; our country of

stupendous cataracts, great flowing rivers, and inland seas of the freshest and purest water.

Like the people of the United Kingdom, we Canadians take our origin from the great historic races of Western Europe. We do not all profess the same form of creed, but we are all Christians. There is to be found among us a difference of language, as was at one time found in these sea-girt isles, but we dwell in peace and amity, for we are all blessed with the full enjoyment of British laws and British freedom. We live under the same flag as you do, we profess no mere mouth loyalty to the one Queen and Empress, whom may God long spare.

DISCUSSION.

SIR DONALD A. SMITH, G.C.M.G. (High Commissioner for Canada): It is a privilege, I consider, to be permitted to say a few words upon the most interesting and descriptive address to which we have just listened. The name of Mr. Fleming is a household word in Canada, and one known in many circles in this country. It is, wherever known, respected as that of a man who has done great and good work, not alone for Canada, but for the Empire as a whole. It was under his directions that the Intercolonial Railway, the first effort to connect the different Provinces of Canada, was constructed. So also with regard to the road going further into the interior and across to the Pacific. Mr. Fleming was the pioneer in this work, in all the preliminary surveys, and under his care a very considerable portion of the line was built. The address to which we have listened is indeed most instructive. Mr. Fleming has told us of Cabot having touched on Canadian soil in 1497. About 200 years after that a company was formed in England which sent its ships into Hudson Bay. At that time the whole of the eastern portion of Canada was a province of France, and I think we have cause for gratification that by the sending of these ships into Hudson Bay at that time, and taking possession of the country from that point to, I think I may say, the North Pole, we have conserved to us to-day what is a very important portion of Canada—I mean the whole of the great North-West, one of the most prolific of the whole continent of America, for that which concerns one of the chief wants of man, that is to say, wheat and other grain. It has, during this last year, produced in the hands of a very few farmers no less than 30,000,000 bushels of wheat alone. From these efforts I think we may look forward, in a very short time, seeing that we really only require population in that country, to producing ten times as much as was done this

last year, and that will, indeed, be a great factor in supplying food for the Mother Country. It was through the enterprise of Canadian merchants, we are told, that the ocean was first crossed by steam power. Passing on to 1838, we find that the "Great Western" and "Sirius" went to Quebec. I remember very well that year, and the rush made to the post-office to get the first letters brought out by those vessels, as I happened to be there myself at the time. We pass on to the Cunard steamers of 1840, and to the Allan steamers by the St. Lawrence somewhat later. It is a matter of some little pride to remember that the Allan Line was really the first to give comforts to passengers in crossing the Atlantic, beyond what they had by remaining down in the cabin. It was they who first gave covered decks. They met with some little opposition with regard to that, and incurred some loss, because by the regulations of the Board of Trade, these decks counted against them as to tonnage. Unfortunately, the "Parisian" of some fifteen years ago is perhaps at the present day the best, or one of the best of the steamers on the St. Lawrence route, and we in Canada certainly look forward with very great desire to a fast line of steamboats to Halifax, and Quebec, and Montreal. That, as has been said, we hope to see accomplished very soon, as I believe the tenders are to go in to-morrow. By means of this service we shall be able to send passengers to Chicago and to the great north-west of America. It is not, I would remind you, simply a scattered population you will find there. You will find cities in Minnesota which have some three or four hundred thousand people where, twenty-five years ago, there were not twenty or thirty thousand. This I say, not to show that that country has greater advantages than Canada, but to show that there is every prospect of success for these Atlantic steamers. You will have really a continuous route across the Atlantic, to the north-west of America under the auspices of British subjects. These steamers will also have another advantage, for I have observed in crossing the Atlantic (as I have done very often indeed, some 100 times or more—as well by the St. Lawrence as by New York), I have observed, I say, that a great many people meet together on board. There are hundreds on every ship during the summer months, and the acquaintance they make with each other under these circumstances has, I think, a most excellent influence. It is when we do not know each other, when we look upon other people as being so very different from ourselves, that suspicion and distrust arise; but when we are thrown together, as when crossing the Atlantic, and learn to know each other, and to see that our

neighbours are very much like ourselves, these prejudices are lost sight of altogether. This improved acquaintance is one of the best safeguards against any great differences between ourselves and our cousins in the United States. As Mr. Fleming has mentioned, you may leave here one Saturday, and in twelve days, even at the present time, you may be on the Pacific Coast. In a very short time with this fast service, you will be able to do the journey in nine, or at the outside ten days. In twelve days more you may be in Japan, so that twenty-one days from here you will be able to reach the Far East. Further, this is a route also to India. I think we all have reason to look forward with pleasure and satisfaction to this new highway from England to China and India, and the east by way of Canada; and I am sure you will wish the project every success.

Sir MACKENZIE BOWELL, K.C.M.G. (late Premier of Canada):— I need scarcely say that it is with unfeigned pleasure I am here to-night and see you, my Lord, occupying the position of Chairman. It was my good fortune to be one of the Cabinet during the whole period of your Governorship of Canada. I have no desire to be invidious, but I hesitate not to say that there has been no governor who has left behind him a name more revered than that of our honoured Chairman. I cannot say that in the governing of a country like ours we have not our difficulties and our differences of opinion, and his lordship will remember that on some occasions differences upon certain minor matters did arise, but there never was any difference of opinion between him and his advisers on the great interests affecting the British portion of the Continent of America and of the Empire to which we all belong. I have listened with great satisfaction and pleasure to the address of my friend, Mr. Fleming, a gentleman with whom I have been intimately associated for a number of years past. He and I travelled from Canada to Australia with a view to the promotion to the fullest possible extent of improved commercial intercourse between those portions of Her Majesty's Dominions, and to that visit we owe the meeting together of the Colonial delegates in Canada two years ago, out of which arose the mission on which we are now visiting our native land. It is a pride to me to know that though I went to Canada with my parents sixty-three years ago this summer, I am an Englishman by birth, and my friend Mr. Fleming, too, belongs to the northern part of these islands; nevertheless, we have learned in our portion of Her Majesty's Dominion never to draw any distinction between the native-born Englishman, Scotchman, or

Irishman, and those born in other portions of the Empire. As his lordship has told you, until quite recently I had the honour of occupying the first place in the Government of the Dominion of Canada; after seventeen years and a half in the Cabinet of Canada, I retired; but though I have resigned I have no intention whatever of retiring from public duty so long as health will enable me to do what little service I can towards the advancement of the country to which I am proud to belong. Our visit to England upon this occasion is at the instance of the Colonial Secretary, Mr. Chamberlain, acting upon the principles laid down by the resolutions passed at the Ottawa Conference, where we affirmed the principle of the desirability of closer cable connection between the different parts of the Empire, and in order to accomplish that object we proposed to establish additional means of communication; first, by a fast steamship service, and next by telegraphic communication connecting every portion of the Empire, without touching foreign soil. I hope I may be spared sufficiently long to see these great objects successfully accomplished. It only shows, I think, that where the Colonists act in unison with the Mother Country, and the latter is willing to accept suggestions even from the humble members of this great Empire, we can accomplish some of the great objects for which this Institute has been organised. I fear that in dealing with a question of this kind I should be wearying you were I to attempt to express my opinions fully on the subject. We have one great desire, and that is, I repeat, to unite as closely as we possibly can all portions of this Empire, and to create not only a feeling of kinship, which really and in fact does exist, but to create and build up in our midst a bond of union that in times of trouble will stand the test. As far as Canada is concerned her affection for the Mother Country was well exemplified when she offered aid if it were wanted in the time of need. It is but a little time since a war-cloud rose in the horizon, and some difficulties were feared. British subjects in the most distant parts of the Empire at once affirmed their loyalty to the Crown, and I think from these and other evidences that you must be convinced we feel ourselves to be part and parcel, as well as an integral part of the Empire, ready at any moment to lay down our lives in defence of our institutions, and of one whom we all love and revere, our Queen. Perhaps it may be considered a little boastful, but I ask you to remember the geographical position of Canada towards the United States, and to remember that you have there a people of five or six millions living alongside a country with over 8,000 miles of frontier, and knowing,

as every one of us does, that in case of difficulty we may be the great sufferers; hence when a people knowing the results that would follow to their homes, their families and their country, are willing to affirm their loyalty and readiness to assist in the defence of the Empire, and that too when the difficulties arise on questions which may not in any way affect their particular portion of the Empire, I think you must give them credit for sincerity in their devotion. We have one great hope and desire as Canadians—our statesmen have adopted it as a principle certainly during the last seventeen and a half years, not to be behind any portion of the world, and more particularly that portion of the American Continent not British. We see with regret that the means of communication between the old country and our own have been gradually falling into that state to which my friend Sir Donald Smith has alluded. I remember when I first crossed the ocean from Canada to England, the Allan Line of steamers was crowded with American tourists, because at that time it was the most comfortable. There are some five hundred miles of inland navigation before you strike the sea, and at that time the Allan Line was second to none on the ocean between England and the American Continent; but to-day we are in this position—almost everyone who desires to cross the Atlantic goes to New York. My friend Sir Donald Smith and I did the same thing the other day. What was the result—we left New York at 10.15 on the Saturday morning and at daylight next Saturday we were moored alongside the dock at Liverpool. When I went to Canada sixty-three years ago we had the pleasure of occupying just eight weeks and two days. I have been told by His Grace Archbishop Taché, who has spent a great portion of his life in the North-West, that he took six months in going from St. Paul and Minneapolis to Edmonton at the base of the Rocky Mountains. It takes six days now. That establishes the fact that we are advancing by means of science so rapidly that we need not be astonished at anything that may be accomplished by the ingenuity of man. When we talk of Imperial Federation and unity of the different sections of the Empire, I would remind you that older men used to look upon distance as insuperable. The United States extends from the Atlantic to the Pacific; it took at one time three or four or five weeks to get from the Capital to its western shore, and yet its people have formed themselves into one country. By means of electricity and steam the time is rapidly approaching when every acre of the world that is ruled by the Imperial authorities and under the British Crown will, by these means, be just as able to

govern its dominions as the United States with its thirty or forty States extending from the Atlantic to the Pacific. These are our hopes and aspirations. We have no desire to be behind our neighbours in enterprise, but to emulate to the fullest extent their virtues and eclipse them if possible in their enterprise. I am glad to congratulate you, Mr. Chairman, on the fact that the Royal Society, which I believe you were the principal instrument in establishing, is taking part in the great demonstration to be held in Canada during the coming year to celebrate its discovery four hundred years ago by Cabot. It must be a gratifying fact to you to know that the efforts you put forth in order to spread the advantages of science throughout the country have been so successful, and that the Royal Society is to take so important a part in the commemoration. Let us look forward to the time when we shall know no distinction between the British subject born in the Colony and one who is born upon the old sod. I know when in Australia three years ago, somebody said that they had no particular history to which they could look back with pride. My answer was that the history of England is as much their glory as it is yours—that you only live on another part of one grand estate owned by the Queen. I am glad to think that the feeling to which I refer is dying out, and that we are cultivating but one feeling, and that is a unity of the Empire and a unity of sentiment, and a desire to have but one people bound together in the strongest possible bonds of interest and affection.

MR. J. CASTELL HOPKINS : I may perhaps be allowed to express the pleasure which a Canadian like myself on his first visit to London experiences at being able to be present at the meeting of a society of which he has so often heard, whose Imperial activity is so widely known, and whose work for the welfare and unity of the Empire he so much admires. I need not dilate on the ability of the paper. This much I will say as to the past history of this country, that we in Canada have also a history, a history abounding in important and romantic episodes, and which during the last hundred years records the efforts of the Canadian people to build up a British Colonial Empire by the side of the great republic of the West. It is a history recording a work which, I believe, the people of England are beginning to appreciate, and which I believe they can help us to extend in the direction of the further unity and greatness of the Empire. There are few of us who do not look upon the changed aspect of Colonial affairs and the changed views of British statesmen with intense pleasure, views like those expressed by such men as Mr. Chamberlain, and which have been

voiced by this Institute upon so many occasions. One word about the Cabot Exhibition. The committee at Toronto are anxious to obtain the co-operation of their friends in England in extending the scope and increasing the value of that Exhibition by every means in their power. There are in England many records bearing upon Canadian interests—many valuable pictures and mementoes of our four hundred years of peace and war. What we ask, therefore, is that in the celebration which is to take place next year in Toronto, under the auspices of the Earl of Aberdeen as Governor-General, and with the active co-operation of many leading men in the Dominion, we may hope and expect to obtain the loan of such documents, pictures, and memorials as our friends in England may have in their possession. It is hoped that a British Committee will be formed to further the objects of this important Exhibition. There is one important point I desire you to remember. This Exhibition will help to dispel the notion that America and Canada are synonymous terms, a notion which of course does not exist to any extent amongst educated people, but which undoubtedly does obtain to a certain extent amongst the immense mass of the people of this country. This is one reason why I should like to see substantial assistance given to the Exhibition in Great Britain, and a practical, strong, united effort made to spread abroad a better knowledge of Canadian history, just as there has been for some time past an effort made to promote better knowledge of Canadian resources. There is much that can be done in many directions, but this is an immediate matter in which you may help us in a practical way.

COMMISSARY-GENERAL G. D. LARDNER: My object in rising is to give an explanation of a somewhat personal character in reference to an allusion made by Mr. Fleming to a gentleman deceased forty years ago, and whom I had the honour to call my father. In the course of his admirable paper, Mr. Fleming alludes to the general belief that Dr. Lardner, in lecturing at Liverpool in the year 1835, had declared that "a voyage by steamship to the American continent and Europe was perfectly chimerical, and that people might as well talk of making a voyage to the moon." Probably Mr. Fleming is not aware that this supposed declaration originated in an erroneous press report, and was at once and at the time contradicted by Dr. Lardner, who set forth in unanswerable language, not only what he meant to say, but what he actually did say. This disclaimer was published in the last edition of his work on the "Steam-Engine," eighth edition, 1851 (Walton and Maberley), as

the following extracts will show. In the preface to this work is the following passage :

■ In the third chapter of the second part will be found a review of the progress of steam navigation from its first establishment in 1812 to the present day. This chapter also contains the refutation of those absurd reports which have been generally circulated, imputing to the author opinions as to the impossibility of the Atlantic voyage, which are precisely the reverse of those he really expressed.

At page 295 of above work is a report of Dr. Lardner's speech from the "Times" of August 27, showing the falsehood of the report that he pronounced the project impracticable. The meeting (British Association) took place on the 25th at Bristol, and the report appeared in the "Times" of August 27, 1836. From that report I extract the following :

. . . He was aware that since the question had arisen, it had been stated that his own opinion was averse to it. *This statement was totally wrong, etc. . . .*

After some observations from Messrs Brunell and Field, Dr. Lardner in reply said :

that he *considered the voyage practicable*, but wished to point out that which would remove the possibility of a doubt, because if the first attempt failed it would cast a damp upon the enterprise and prevent a repetition of the attempt. What he did affirm and maintain in 1836-37 was that the long sea voyages by steam which were contemplated could not be maintained with the regularity and certainty which are indispensable to commercial success by any revenue which could be expected from traffic alone ; and that, without a Government subsidy of a considerable amount, such lines of steamers, although they might be started, could not be permanently maintained.

Nevertheless, the charge has been brought up again and again, and has been reproduced in public places for no other conceivable motive than perhaps to point an imaginary moral or adorn a sensational statement.

COL. J. HARRIS :—In the few remarks I propose to make I shall confine myself to the excellent paper. I observe that Mr. Fleming states that before the advent of the Cunard Line of steamers in 1840, there were some American liners. I am a living witness to the fact, for I have dined on board one of these sailing packets—there were only four—which went from St. Catherine's Docks to New York, and carried about thirty passengers each once a month. When we see the mighty strides in the matter of steam

navigation, we are astounded, and I wish Mr. Fleming in his paper had given us some information as to the prosperity—the increasing prosperity of Canada, showing the necessity not only for the line now proposed, but for other lines to follow. I recollect near fifty years ago, when I was in Nova Scotia, I opened the first gold mine at Sherbrooke. I notice that the Dominion in 1885 produced \$10,000,000 of mineral, and in 1895 \$22,000,000—a marvellous progress. At the present time we find there is a gold wave passing over the world, and I maintain from what I know of Canada, that there is not a richer country in the world for the precious and other metals. In the Mackenzie basin there is from 150 to 200,000 square miles of auriferous deposit, and 150,000 square miles of petroleum lands. On the Pacific Coast we find in British Columbia 1,300 miles of coast, 500 miles in breadth, that is also auriferous. Where is there a greater country in the world for minerals than Canada? That is why we should have more means of communication with Canada in the way of additional steamship lines, such will increase the country's greatness and riches. It has recently been argued that we should have stores of corn in this country to guard against famine during wars. I maintain that the greatest granary we can have is Canada within a few days' sail of England, and the Canadians are willing and able to supply us with all the food we require, not only in the matter of grain but also of cattle. A statement made in the paper I think is made in error. Mr. Fleming says:—

In Canada we have an inland sea—the Gulf of St. Lawrence—like the Baltic, open in summer, but in winter more or less obstructed by ice so as to impede navigation. The shores of the Gulf of St. Lawrence are everywhere British, while Sweden, Germany, and Denmark share with Russia the claim to the shores of the Baltic. Hudson Bay in one respect resembles the White Sea; its shores are wholly Canadian, as the shores of the White Sea are wholly Russian. During a short period in summer both seas are open to navigation.

I think the evidence goes to the contrary of part of that statement. The White Sea is closed by ice for nine months of the year; whereas Hudson Bay has never been known to freeze over. The evidence shows that Hudson Bay for only a distance of 1,000 yards from the shore is ever frozen over. Dr. Bell, the Assistant Director of the Meteorological Survey of Canada, informs us that in the popular mind Hudson Bay is associated with the polar regions, yet that no part comes within the Arctic Circle, and the south part is south of the latitude of London. It never freezes

over. Mr. George A. Bain, C.E., said before the Legislative Assembly of Manitoba that the ice is never solid for more than 1,000 yards from the land, and there is little difficulty that could not be overcome to prevent the loading and unloading of steamers all the winter. Perhaps what is referred to in the paper is the Straits and not the Bay. If so, I think I can show that there is error there also. The Legislative Assembly of Manitoba appointed a commission of inquiry, and they wound up their report thus: "No evidence has been given that goes to prove that Hudson Strait and Bay proper ever freeze over, or that the ice met with is sufficient to prevent navigation at any time of the year." That report was made after the examination of witnesses upon oath. Capt. Hackett, for 39 years employed by the Hudson Bay Company, in his evidence stated that the Straits never freeze, and that there is no reason why steamships should not navigate them at any time; while Admiral Markham, whose authority as an Arctic explorer none will gainsay, said that a well-found steamship would have no difficulty at all times in navigating Hudson Strait and Hudson Bay. I will not go further to prove that there is some little mistake in the mind of Mr. Fleming, and I should not like it to go forth that the condition of Hudson Bay and Strait would prevent an additional route, which I trust will be opened shortly into the heart of Canada.

Dr. RANKINE DAWSON: I have very little claim to be heard to-night, and absolutely none to criticise the very full, able, and interesting paper to which we have listened. Like others, I have done my share of voyaging, perhaps more than my share. I have lived for some years on the ocean, and have averaged for several years in succession upwards of 60,000 miles a year of ocean travel. I can testify to the vast improvements in speed and equipment that have taken place, and of which we have been told to-night. "The prison, with a chance of being drowned," in Dr. Johnson's time, has been transformed into the floating hotel of our own. Mr. Sandford Fleming drew a very interesting parallel between Canada and Russia. I think, however, he made a slip in saying, "We have in Canada greater varieties of climate, and larger areas of country suitable for settlement and cultivation." The Russian Empire is one of the wonderful countries of the world, and with its 8,000,000 of square miles of very partially developed territory, and 125,000,000 of patriotic citizens, ranks second only to the British Empire as a whole in these respects. I was much interested in what Mr. Fleming has told us as to the differentiation of steamship business.

Undoubtedly the tendency is altogether in this direction, much as it is in the railroad world. As we have goods trains and passenger trains, so we already have passenger steamships and freight steamships. Ere long I do not doubt that we shall have fast steamship lines exclusively devoted to carrying mails, as we already have fast mail trains on the principal lines of railroad. In this connection it has occurred to me, as no doubt it has to others, that the Canadian Government is missing an opportunity of taking the initiative, and of making a new departure by establishing a fast line of weekly steamships running between the nearest ports, for mails only, with perhaps limited accommodation for a few passengers at double rates. Such a line might reduce the time for crossing the Atlantic by at least a day, and would give to Canada the control of the mail route between Europe and America, as she already has to a considerable extent that of the cable routes. Unlike Sir Mackenzie Bowell, who has told us that he was only an emigrant to Canada, I, sir, am Canadian born. My father and grandfather were Canadians before me, and I know of no reason to regret the fact. Whilst I yield to no one in my desire to see the interests and the welfare of Canada advanced in every way, I claim the privilege of holding my own opinion as to the means by which this desired result may be best brought about.

The CHAIRMAN: I have now to move a vote of thanks to Mr. Fleming. I think we must congratulate him that we have in this audience no members of that class of objectors to rail and steam communication, who have been particularly prominent in the House of Commons of late when the subject of light railways was mooted. Any light railway was violently objected to if it could possibly be thought to benefit, in the most distant way, a landlord; but, judging from the audience to-night, you seem to think there are no landlords in Canada, and if there are, it does not much matter if they are benefited! Mr. Fleming has touched but little on the subject of the submarine cables, although a great part of the exertions he has made during the last few years has been given to the extension of telegraph communication between different parts of the Empire. It is very much to be desired that all communication between ourselves and the Colonies should go through British cables, so that messages may not be tampered with by any foreign hands. That is a great point. Mr. Fleming has been comparatively so little in England of late years, that he must excuse our tardiness in taking up his large and patriotic ideas, and he must remember that only in the last year have we begun to

connect by wire our own lighthouses around our coast! I believe the tenders now to be submitted for the new steamer service will probably very soon result in our having excellent steamship communication, both on the Atlantic and Pacific. In that matter also we have been extremely slow, some thinking, as Englishmen naturally do, that everything can be done by private effort, and that no Government subsidy is required. But when you see that almost every other Government gives these subsidies, the French Government giving £600,000 a year to the Messageries Company, the German Government, for instance, on the East Coast of Africa giving their line to Delagoa Bay a subsidy of £45,000, and when you consider also the great speed and high engine power absolutely requisite in order to have a successful passenger service, it is perfectly obvious that as regards Canada (a comparatively small country as far as population goes, though large in area, a country only possessing a population something like that of Sweden), it is obvious, I say, you must assist with a subsidy, at all events in the first instance, until that great country has been developed. Therefore we welcome the evidence that the Government mean to come forward and meet the Canadians half way in having a really good and fast service on the Atlantic. Nobody has contributed more to that result in a private capacity than has Mr. Fleming, and we must thank also Sir Mackenzie Bowell for the material assistance his Government have given to the project. I ask you to join in a vote of thanks to Mr. Fleming for bringing the subject again before us, and we wish him continued success, not only as regards the steamship lines, but also in the extension of telegraphic communication.

Mr. SANDFORD FLEMING: I would have liked to say a few words, but the hour is too late. I regret very much if I have put unauthorised words into the mouth of the late Dr. Lardner. I only quoted words that were published in a work precisely as they are written, and I am very glad to learn that they were corrected by the distinguished scientist himself before he died. I ask you to join with me in giving a hearty vote of thanks to the Chairman for his services.